

SUPPORT FOR THE AMENDMENTS

The specification has been amended to recite a claim of priority to related International and German patent applications, as set forth in the originally filed Application Data Sheet. In addition, the specification been amended to include appropriate section headings and a substitute abstract to address the Examiner's objections to the originally filed specification and abstract.

The present amendment cancels claims 1-24, and adds new claims 25-46.

Claims 1-24 have been cancelled, and new claims 25-46 have been added, to place these claims in a better condition for allowance. Support for these amendments is provided by the originally filed claims and specification.

It is believed that these amendments have not resulted in the introduction of new matter.

REMARKS

Claims 25-46 are currently pending in the present application. Claims 1-24 have been cancelled, and new claims 25-46 have been added, by the present amendment.

The rejections of: (1) now cancelled claims 1-4, 6, 9-11, 13-15, 17, 20-22 and 24 under 35 U.S.C. § 102(b) as being anticipated over Xue (U.S. Patent 7,094,830, which is the English language equivalent of WO 2003/000760); (2) now cancelled claims 5, 7, 12, 16, 18 and 23 under 35 U.S.C. § 103(a) as being obvious over Xue in view of Auhorn (U.S. Patent 4,908,240); and (3) now cancelled claims 8 and 19 as being obvious over Xue in view of Nelson (U.S. Patent 4,198,471), are respectfully traversed in part, and obviated by amendment in part, with respect to new claims 25-46, which incorporates into claims 25 and 37 the limitation of the paper being selected from the group consisting of a coated paper and a sized paper, as previously recited in now cancelled claims 8 and 19.

New claim 25 is directed to a method of treating a surface of a paper selected from the group consisting of a coated paper and a sized paper, wherein the method comprises coating the surface of the paper with composite particles comprising a polymer and at least one finely divided inorganic solid in the form of finely divided inorganic solid particles having a weight average particle diameter of  $\leq 100$  nm.

New claim 37 is directed to a method of treating a surface of a paper selected from the group consisting of a coated paper and a sized paper, wherein the method comprises coating the surface of the paper with an aqueous dispersion comprising a mixture of an aqueous polymer dispersion and at least one finely divided inorganic solid in the form of finely divided inorganic solid particles having a weight average particle diameter of  $\leq 100$  nm.

Applicants respectfully submit that contrary to page 10 of the Official Action, a skilled artisan would not have been motivated to coat the aqueous composite particle dispersion of Xue, which necessarily contains inorganic solid particles as a constituent

thereof, onto the coated and/or sized paper of Nelson to arrive at the method of the present invention, absent impermissible hindsight reconstruction, because Nelson teaches away from coating inorganic solid pigment particles onto coated and/or sized paper, thereby precluding a *prima facie* case of obviousness.

Xue describes a process for preparing an aqueous composite particle dispersion comprising composite particles comprising a polymer and at least one finely divided inorganic solid in the form of finely divided inorganic solid particles having a weight average particle diameter of  $\leq 100$  nm (See e.g., abstract, claim 1). Accordingly, inorganic solid particles are a necessary constituent of the aqueous composite particle dispersion described in Xue.

Nelson describes treating coated and/or sized paper with an inventive polymeric pigment system consisting of a blend of a thermoplastic and a thermosetting pigment, without the presence of finely divided inorganic solid pigment particles (See e.g., column 1, lines 27-29, column 2, lines 33-35, 48-53 and 65-67, column 3, lines 4, 14 and 30, column 4, lines 12 and 27, column 5, lines 10-11, claims 1 and 2).

Nelson describes that inorganic solid pigments are disadvantageous because they are often brittle and subject to dusting (See e.g., column 1, lines 45-59). Nelson describes that while it is generally not possible to obtain desired gloss under mild calendering conditions, inorganic solid pigments do not perform well under high calendering pressures. *Id.* Nelson describes that inorganic solid pigments must therefore be supercalendered off to achieve adequate gloss and smoothness, which constitutes an additional operation step that increases production costs. *Id.*

Nelson describes that ink receptivity is substantially improved with the inventive polymeric pigment system provides a lighter-weight coating as compared to conventional coatings comprising inorganic solid pigments (See e.g., column 5, lines 9-12). Nelson

describes that the inventive polymeric pigment system provides a lighter-weight coating as compared to conventional coatings comprising inorganic solid pigments, thereby improving the density of the resultant paper sheets (See e.g., column 2, lines 54-61, column 5, lines 50-68). Nelson describes that sheets having a higher bulk are advantageously achieved with the inventive polymeric pigment system as compared to those obtained with conventional coatings comprising inorganic solid pigments, thereby resulting in better handling and feeding into printing equipment. *Id.* Nelson describes that as calendering pressures increase, paper sheets coated with the inventive polymeric pigment system have a desirably lower increase in apparent density as compared to paper sheets coated with conventional coatings comprising inorganic solid pigments. *Id.*

As a result, a skilled artisan would not have been motivated to coat the aqueous composite particle dispersion of Xue, which necessarily contains inorganic solid particles as a constituent thereof, onto the coated and/or sized paper of Nelson to arrive at the method of the present invention, absent impermissible hindsight reconstruction, because Nelson teaches away from coating inorganic solid pigment particles onto coated and/or sized paper in favor of the polymeric pigment system described therein, thereby precluding a *prima facie* case of obviousness.

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Xue and Nelson to direct a skilled artisan to arrive at the method of the present invention, which is clearly not the case, such a case of obviousness is rebutted by a showing of unexpected results.

As shown by the comparative experimental data presented in Table 1 of the present specification, which is reproduced below for the Examiner's convenience, Applicants have discovered that superior properties, with respect to surprisingly improved dry picking resistance, wet picking resistance and picking resistance in the case of multiple printing in an

offset test, are unexpectedly exhibited by coated or sized paper that has been surface treated with a coating of composite particles in accordance with the method of the present invention, as compared to the inferior properties exhibited by conventional coated or sized paper that has not been surface treated with a coating of the claimed composite particles.

Table 1	Dry Picking Resistance (cm/s)	Wet Picking Resistance (%)	Picking Resistance (Offset Test No.)
Ex.	71	57	6
Comp. Ex.	63	51	4

Based on the disclosures of Xue and Nelson, a skilled artisan could not have reasonably predicted that superior properties, with respect to improved dry picking resistance, wet picking resistance and picking resistance in the case of multiple printing in an offset test, would be exhibited by coated or sized paper that has been surface treated with a coating of the claimed composite particles in accordance with the method of the present invention.

Withdrawal of these grounds of rejection is respectfully requested.

The statutory double patenting rejection of now cancelled claim 3 under 35 U.S.C. § 101 as claiming the “same invention” as that claimed in claim 1 of Xue (U.S. Patent 7,094,830) is respectfully traversed with respect to new claims 25-27.

Based on established U.S. case law, “same invention” means identical subject matter. See e.g., *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894), *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

It is a well recognized premise of claim construction that a dependent claim shall necessarily be construed to incorporate by reference all of the limitations recited in the claim upon which it depends. See e.g., 35 U.S.C. § 112, fourth paragraph.

Claim 27 depends from and necessarily incorporates by reference all of the limitations recited in claims 25 and 26. Accordingly, claim 27 is directed to a method of treating a

surface of a paper selected from the group consisting of a coated paper and a sized paper.

However, claim 1 of Xue is silent as to the method of claim 27. Therefore, contrary to page 10 of the Official Action, claim 1 of Xue does not claim the "same invention" as that claimed in claim 27 of the present invention.

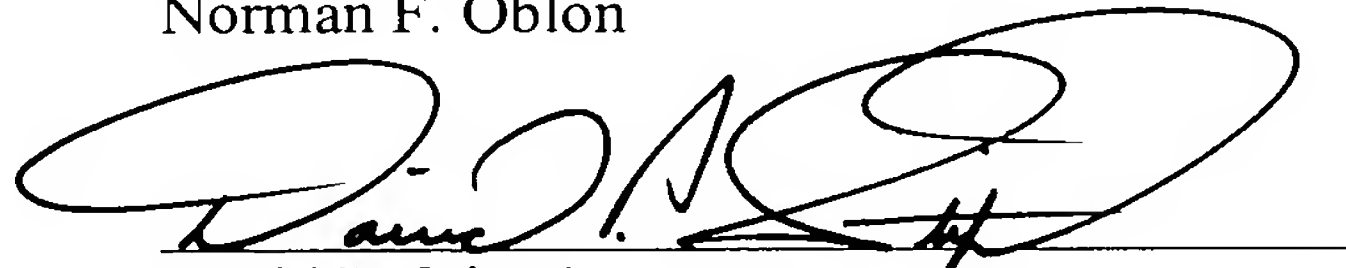
Withdrawal of this ground of rejection is respectfully requested.

The objections to the specification and the abstract for various informalities are obviated by amendment. Withdrawal of these grounds of objection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "David P. Stitzel", written over a horizontal line.

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